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ABSTRACT

It is the position of the Michigan Industrial Education Society, Inc. that industrial arts can and should play an essential role in meeting the provisions of the 1974-75 Michigan State Plan for Vocational Education which serve the career development needs of students from elementary through adult levels. The value of industrial arts was recognized in the emergencies of career education and in the Educational Amendments of 1972. A definition of industrial arts included its concern with the interaction and interface between society, man, and technology. Career education in Michigan is developing on basis of identified life roles being legitimate concepts to guide educational program development. Industrial arts contributes to many facets of career education. In career development, particularly, it has specific roles and responsibilities. Five recommendations for future action by groups and individuals in industrial arts and in education in general are presented in the light of concern with the developmental status of career education, compliance with the accountability model, and lack of fiscal appropriations. (Author/AG)

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Organized in the Interest of Industrial Education in 1928

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A POSITION PAPER

on

INDUSTRIAL ARTS EDUCATION AND CAREER DEVELOPMENT

in

MICHIGAN

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A Position Paper on Industrial Arts Education
and Career Development in Michigan

INTRODUCTION

The focus of this paper is the examination of the role of and the implications for industrial arts education in Career Development in Michigan. Recent proposed changes in the 1974-75 Michigan State Plan for Vocational Education, hereafter referred to as the State Plan, reflect the inclusion of industrial arts in addition to the traditional vocational service areas. It is the position of the Michigan Industrial Education Society, Inc. that industrial arts can and should play an essential role in meeting the provisions of the State Plan which serve the career development needs of students from elementary through adult levels. [6,12]

Subsequent sections of this paper will deal with (1) the historical background of industrial arts and federal legislation, (2) the contemporary definition of industrial arts education, (3) the contemporary definition of career education, (4) the role of industrial arts in career education, (5) the role of industrial arts in Michigan's career development plans, and (6) recommendations for future action. [10]

"Career development", as it is used in this paper, will specifically include the career education concepts of self-awareness, career awareness, career decision-making, and placement. These concepts represent the current State Department definitiсn of "career development". [12]

HISTORICAL BACKGROUND

Since 1971, two major thrusts have been initiated which led to

a legal recognition of industrial arts. One of the major thrusts was the emergence of career education. This concept has since generated much discussion, and is currently a major force calling for change in the field of education. Two elements in Michigan's total concern for career education, as reflected in the State Plan, are career development and vocational education. [5,12]

The second thrust, which in part, grew out of the national career education movement, involved the inclusion of industrial arts in the Educational Amendments of 1972 (Public Law 92-318). In part, this legislation broadened the definition of vocational education to specifically include industrial arts, and allowed each state to include industrial arts in their state plan. [9]

As each of these two thrusts were evolving in concert with each other, a national task force was commissioned to develop a statement. The task force, composed of industrial arts educators representing the Industrial Arts Division of the American Vocational Association and the American Industrial Arts Association, focused their responsibility upon the implications for curriculum development and program implementation. Their publication entitled, Guidelines for Industrial Arts in Career Education, provides an extensive analysis of the implications for industrial arts in career education, and served as a basic model for development of this paper. [10]

INDUSTRIAL ARTS EDUCATION

Industrial arts education has served a variety of purposes and goals for students in Michigan's educational programs for a number of years. A major concern of industrial arts is the interaction and interface between society, man, and technology. Recent technological developments

and advancements demands that a major portion of the school's program and curriculum attempt to prepare youth to live in a society where they are required to weigh the merits of technology and assess its implications for themselves, as well as other individuals affected by it on a daily basis. [8]

Technological growth has had, and will continue to have, numerous positive effects. Technological growth has generated a tremendous number of new inventions, materials, processes, and machines that have benefited the society through higher standards of living. As these technological advancements continue to reflect changes in our society, industrial arts becomes one of the major disciplines responsible for educating the youth as to the implications and role of industrial technology and industrial occupations in America.

Experience has shown that technology can also be easily misguided in attempting to serve man. To some degree misguided technology has contributed to the deterioration of our environment with respect to efficiency, tedious work roles, fluctuating unemployment, discontent among consumers, and the reduction of man's individuality through increased specialization. Industrial arts has become the educational discipline with major responsibility for educating our youth to live in a society which is highly influenced by technological growth and advancement. [9,10]

Industrial arts education is defined in the Federal Register and the State Plan as:

> *"...those educational programs which pertain to the body of related subject matter, or related courses, organized for the development of understanding about the technical, consumer, occupational, recreational, organizational, managerial, social, historical, and cultural aspects of industry and technology including learning experiences involving activities such as experimenting, designing, constructing, evaluating, and using tools, machines, materials, and processes which provide opportunities for creativity and problem solving and assisting*

individuals in the making of informed and meaningful occupational choices." [6,12]

Several unique goals have been identified for students enrolled in contemporary industrial arts education programs. Industrial arts programs provide activities and experiences whereby students will:

1. Develop insights and understandings of industry and its place in our culture.
2. Discover and develop talents, attitudes, interests, and individual potential related to the industrial-technical areas.
3. Develop abilities in the proper use of tools, machines, and processes.
4. Develop problem-solving and creative abilities involving materials, processes, and products of industry.
5. Inter-relate the content of industrial arts with other school subjects in the curriculum.
6. Develop an understanding of a variety of careers and their requirements. [8,10]

CAREER EDUCATION

Career education is a concept which emerged on the education scene in 1971. It is essentially intended to enhance the goals and purposes of education as a whole by creating an overriding focus for education on a series of career/life roles. Through career education all subject matter areas and grade levels have a responsibility to assist each student in the pursuit of those career/life roles appropriate to his interests, aptitudes, abilities, and needs. [2,3,9]

Perhaps career education was most aptly defined by Sidney P.

Marland, the former U.S. Commissioner of Education:

> *"Career education provides for a broad approach to preparation of citizenship; provides job information, and skill development; and also helps individuals develop attitudes about the personal, psychological, social, and economic significance of work in our society. It develops and fosters vocational and recreational interest of individuals to help prepare for a well-rounded living in a world in which leisure time is increasing and greater opportunity for a self-expression through creative production is available."* [9,10]

Several goals have been identified for career education. These student-centered goals include:

1. Contributes to the economic life of society by developing a producer of goods or provider of services.
2. Furthers the importance of membership in a family group.
3. Provides opportunities for successful participation in the life of the community.
4. Assists in the development of avocational interests.
5. Brings about the acceptance of responsibility concerning the asthetic, ethical, and moral life of the community.
6. Aids in revealing the range of career options and the development of positive attitudes toward life and work. [10]

Career education in Michigan is developing on the basis of identified life roles being legitimate concepts to guide educational program development. The four identified life roles are occupational, family, citizen, and avocational or leisure roles. [2]

THE ROLE OF INDUSTRIAL ARTS IN CAREER EDUCATION

Industrial arts provides many opportunities for students to

become involved in learning activities and experiences which are pertinent to their future career and career-related roles in a technological/industrial society. A comparison of previously identified definitions, goals and characteristics for career education and industrial arts education will bear this out. [10(AVA Convention presentation)]

Industrial Arts Goal	Career Education Characteristic
1. Provide an opportunity to make other school subjects more meaningful and relevant.	1. Increase the relevance of all educational subject matter and promote a restructuring and focusing of it around a career development theme.
2. Bring about an understanding of career opportunities and requirements in industrial pursuits and develop traits that help obtain and maintain employment.	2. Provide students with the guidance, counseling, and instruction needed to develop self-awareness, self-direction, and expanded career awareness and aspirations.

Industrial arts can provide experiences in a variety of career clusters such as construction, manufacturing, communications, and transportation. It also provides students with opportunities to actively engage in industrial processes such as planning, designing, developing, constructing, organizing, controlling, producing, testing, and disseminating, and study the utilization of numerous industrial materials such as metals, plastics, ceramics, and woods. [4,8,10]

In addition, industrial arts also contributes to the dimensions of career development: self-awareness, career awareness, and career exploration through its activity-based role playing experiences. It assists individuals in the formation of a positive attitude toward craftsmanship, work, and self. Learners also experience the development of a favorable attitude and appreciation for creative problem-solving and thinking, their individual resourcefulness and self-reliance. [7,9]

Guidance and counseling activities assist the students in

developing a self-awareness and permits them to compare those aptitudes, abilities, and interests against those required in a variety of careers, through activity-based educational experiences in laboratories. [5]

Industrial arts can be an integral part of career education in all of its phases, kindergarten through post-secondary. Industrial arts subject matter and activities can be infused in the lower grades and later can emerge as courses in the middle and upper grades. Industrial arts programs directly serve the technological and educational needs of persons involved in many phases of career awareness, exploration, and preparation. [2,3,9]

THE ROLE OF INDUSTRIAL ARTS IN CAREER DEVELOPMENT

To date, career education, in Michigan, has been initiated primarily through the Vocational Education and Career Development Service of the State Department of Education. Several World of Work/Career Education pilot programs have been sponsored by the Career Development Unit of the VECDS. The State Plan for Vocational Education reflects several characteristics of different levels of elementary through adult career development programs:

> Early exposure of students to occupational concepts and experiences is necessary if they are to develop positive attitudes toward work and acquire information and experience to assist them in making future educational and occupational decisions. Career development focuses on offering students the opportunity to develop awareness and decision-making skills.
>
> Career development begins in kindergarten and continues throughout life as an integral part of the total education program. It provides for sequential exposure to occupations through information, exploration, and preparation.
>
> Children need the opportunity to continually explore their attitudes, aptitudes, and interests in relation to a wide range of educational and career opportunities. Beginning at the elementary level, students are assisted in developing

> self-awareness. They learn to assess interests, abilities, and attitudes about themselves and those around them in relation to life roles.
>
> At the junior high school level, youth focus their exploration on awareness of careers, while sharpening self-understanding and building skills in career decision making. All educational disciplines are correlated and combined with a strong guidance and counseling program to introduce more relevancy between the relationship of the educational program and the real world.
>
> The career development program at the high school level includes more specific exploration of careers. Skill preparation is available to students who desire it and emphasis is placed on career decision-making skills. Through systematic placement assistance, students have the opportunity to assess and act upon their skills and career goals in relation to a job or further education. Follow-up of student placements provides feedback for program evaluation.
>
> Although the preceding paragraphs imply that certain phases of career development take place at certain grade levels, all program components take place at all levels. Emphasis on a particular component depends on the needs of the student for individual career development. The focus of career development for adults, then, may differ according to the individual involved. In some cases, this may mean beginning with the rudiments of self-awareness, whereas, in other cases, this may mean re-training or job upgrading. [12]

The foregoing statement of purpose for career development in Michigan suggests many possible roles and implications for industrial arts. The preceding section regarding the relationship of industrial arts to career education covered many of the general implications. In the following paragraphs an attempt will be made to relate some specific roles and responsibilities for industrial arts within the context for career development.

Industrial arts programs directly involve students in developing and/or refining basic skills needed in many occupations and the career-life roles. The inter-relationship of reading, writing, and other basic skills to occupational competency is exemplified in activity-based

learning experiences in industrial arts through the utilization of basic skills for planning, designing, and other similar activities.

The goals of industrial arts education, previously identified, highlight the discovery and development of individual aptitudes, abilities, interests, and attitudes through classroom and laboratory experiences involving industrial roles, materials and production processes. This aspect of career development is emphasized at all levels (elementary through adult) of industrial arts programming.

Industrial arts also offers significant experiences through which students may analyze and compare their personal interests, aptitudes, and abilities against the intellectual, physical, and emotional requirements of a tentative career choice(s). The self awareness/career awareness comparison is focused upon in such industrial arts experiences as designing, constructing, evaluating, and managing when students are comparing and evaluating those experiences inherent in an occupational cluster against their individual needs and interests relative to a tentative career choice(s).

Intercurricular experiences are readily facilitated through industrial arts. Curriculum projects such as the Industrial Arts Curriculum Project have demonstrated the functional inter-relationships between contemporary industrial arts curriculum content and such disciplines as mathematics, science, and social science. Certain of these projects have effectively demonstrated that teachers can effectively coordinate the educational experiences of students in order that these experiences more closely represent the inter-relationships of an industrial/technological society.

Several additional roles and functions are also served by industrial arts in the career development component. Some of these roles

provide for the:

- Development of positive self-concepts relative to occupational selection and pursuit based on positive career exploration activities in industrial arts.
- Development and refinement of career decision-making skills based on the decision-making experiences inherent in industrial arts activities and/or programs.
- Exploration of an arrangement of occupational clusters through classroom, laboratory, and field experiences focusing upon prerequisite employment needs for each cluster.
- Preparation of students for entry into vocational programs at the secondary and/or post-secondary level where they will have the opportunity to develop the skills necessary for employability.

It should be noted that one of the four Program Standards of Quality for educational programs, as identified in the State Plan, is the inclusion of a career development program component. In overall program planning, "each local educational agency is requested to consider plans for developing and implementing career development as an integral part of the school district's educational program. This program should include all educational disciplines and be supportive to all youth in their educational development for entry into the world of work." [12]

RECOMMENDATIONS FOR FUTURE ACTION

The eventual outcome or product of most position papers is a set of recommendations or suggested strategies for implementation action on the topic under consideration. Because of the broad implications of the basic topic under consideration here, the topic must be handled with careful deliberation and due concern on the part of all readers of this paper.

This paper had its beginnings with an expressed concern for how the federal funding of industrial arts would be handled in Michigan. As with most topics which reflect monetary implications for educational programming, there is no one direct answer. Based on the current situation in Michigan there is no simple answer to the questions of when will funding be available, what do I have to do to qualify, or how much will my program be receiving?

Before reading the recommendations for future action as prescribed by the authors of this paper, you are asked to carefully consider the following concerns which are influencing the outlook for funding of on-going industrial arts programs.

The first concern one must consider relates to Michigan's total plan for career education. At this time career education is still a fairly new concept to most local school personnel. With the recent passage of the 1974 Michigan Career Education Bill, however, the state is embarking on a massive effort to infuse career education programming into every classroom in the state. Under the primary direction of the Michigan Department of Education, it appears as through this effort is organized and planned for the single purpose of creating meaningful and relevant changes in education throughout the state.

This comprehensive effort is currently unfolding in the form of developmental, experimental, and exemplary program funding through the Career Development Unit of the Vocational Education and Career Development Service, and the General Education Services Division. These two units are currently funding projects and exemplary programs totaling approximately $1,100,000 annually. These projects are designed to field test basic components of the total career education model.

As performance outcomes and alternative delivery systems for each component of career education are refined and validated, the funding focus will change. The fiscal spending plan will alter its focus to include those programs willing to adapt or refine the validated performance outcomes and delivery systems, thus plugging the efforts of typical industrial arts program into the objectives of the mandated, state-wide career education effort.

At this time it appears that the only avenue open for funding of industrial arts programs appears to be funding of a developmental or exemplary nature. Eventually the outcomes of these exemplary efforts will lead to the development of a set of specific administrative guidelines which will provide for support of on-going programs.

Another contextual concern influencing this problem relates to the state-wide accountability model. Accountability for educators and educational programs has become a real and genuine concern of the State Department, as well as other groups and agencies throughout the state. The problem for a new area such as industrial arts is: how can one be held accountable if the overall outcomes to be achieved for accountability are not yet identified. It seems unlikely that funding support will be provided before the accountability criteria are developed.

The final concern for consideration is related to the actual dollar availability. The Educational Amendments of 1972 included industrial arts in the federal funding structure, but did not appropriate or designate any specific funds to support these newly authorized programs. It should also be noted that the federal appropriations for vocational education have not increased significantly over the past three years. Without increased appropriations for vocational education it appears

unlikely that industrial arts will attain any significant level of funding for support of on-going programs.

In light of these concerns (developmental status of career education, compliance with the accountability model, and lack of fiscal appropriations), industrial arts educators have considerable cause for optimism. Activities and events planned for the immediate future should see industrial arts move into a key position of leadership in providing educational experiences and programs of a career development/exploration nature. The roles of industrial arts in the career development component of career education must become fully operationalized through exemplary programs to determine the exact nature of its contribution to the total effort.

The following are a series of recommendations for future action by: (1) the Society, (2) industrial arts teachers and local school personnel, (3) teacher educators, (4) CEPD and intermediate school district personnel, and (5) the State Department of Education. Active implementation and follow-up of these recommendations is needed to guide the overall development of industrial arts education within the framework of career development in Michigan.

RECOMMENDATION I. *The Michigan Industrial Education Society should establish a series of ad hoc committees of members and non-members to pursue the implications and actions needed relative to the following aspects of industrial arts education programming:*

1. *Development of performance outcomes for students in career exploration in middle school/junior high programs.*
2. *Development of concepts, ideas, and text for new section of the "Administrative Guide for Vocational Education." This would involve State Department personnel.*

3. *Development of guidelines for funding priority areas, long range planning, and spending plans.*
4. *Development of administrative and communication linkages between the local industrial arts teacher, local administrators, intermediate administrators and the various state department services.*
5. *Development of specific industrial arts leadership within an appropriate division of the state department.*
6. *Development of means by which the Society might have input into specific "Request for Proposal" documents initiated by the state department relating to industrial arts education.*
7. *Continue the involvement of the Society in the newly created Michigan Council of Career Education Organizations through participation and espousal of the role of industrial arts education in career education.*
8. *Continue to seek support for the benefit of industrial arts and trade and industrial education as appropriate related components which contribute to career development and vocational education in Michigan.*

RECOMMENDATION II. *Industrial arts teachers, individually or collectively, should begin a series of activities (which take advantage of the situation established by the Educational Amendments of 1972 and the Michigan Career Education Act of 1974) such as:*

1. *Insist that local school boards and administrators adopt policies which are in line with career development concepts and which allow funding of industrial arts programs which contribute to career development*

and/or vocational education.

2. *Establish administrative and communication links with local career development and vocational personnel.*
3. *Establish administrative and communication links with intermediate district personnel especially the Career Education Planning Coordinators.*
4. *Identify unique and common performance outcomes and survival skills which industrial arts courses provide for students. These should be used to justify support and to clarify the contributions of industrial arts in terms of student behavior.*
5. *Develop exemplary courses or programs which contribute to career development and vocational education and generate subsequent local and state support.*
6. *Plan and conduct local seminars and workshops to inform and update industrial arts teachers in each intermediate school district about current topics.*
7. *Establish local student organizations and encourage student involvement in career development activities, the Student Industrial Competitions, and the M.I.E.S. Awards Program.*
8. *Develop plans for the utilization of student teachers and intern teachers in the development and conduct of career development course/program segments and activities.*

RECOMMENDATION III. *Industrial education teacher educators should establish and promote pre-service and in-service programs which give direction, develop competencies, and allow direct participation of*

themselves and their students. They should:

1. *Work through the curricular authority of each university to establish career education concepts and career development functions in the pre-service program of all teachers.*
2. *Provide exemplary pre-service courses which treat awareness, exploration, and preparation activities.*
3. *Develop cooperative arrangements with local educational agencies which allows both groups of personnel to benefit from the knowledge, services, and programs which exist in both settings.*
4. *Seek financial support for appropriate program elements which have been previously excluded from funding under vocational legislation.*

RECOMMENDATION IV. *Career Education Planning District (CEPD) and Intermediate School District personnel should become involved in a series of activities which will serve to coordinate the identification of a role for industrial arts education within the CEPD plan. These activities should:*

1. *Identify and inform concerned industrial arts educators within the CEPD through a series of workshops or seminars devoted to career development.*
2. *Establish a subcommittee to the CEPD Coordinating Council specifically charged with the responsibility of fitting industrial arts into the CEPD plan.*
3. *Coordinate inservice workshops designed to assist local school personnel in the preparation of proposals*

for industrial arts funding.

4. *Adopt Council and Board policies supporting industrial arts and career education, and educational programs which serve to implement career development concepts at the classroom level.*

RECOMMENDATION V. *The Michigan Department of Education, through its appropriate divisions and/or services, should assist industrial arts educators and administrators in more fully understanding the role and implications for industrial arts in Michigan's career education plan. Recommended activities in this area include:*

1. *Establish a specific industrial arts leadership position(s) within an appropriate division of the State Department of Education for the purpose of providing significant coordination, direction, input, and leadership for all K-12 developmental activities related to industrial arts programming statewide.*
2. *Continue the policy of open forums and discussion with professional organizations, local school personnel, teacher educators, and CEPD personnel.*
3. *Sponsor a series of regional workshops designed to acquaint all interested personnel with the role of industrial arts in the state's educational planning scheme. These workshops might focus on prospective guidelines and development of proposals.*

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